Comment on Finley, 'All the Fish in the Sea,'

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Carmel Finley, *All the Fish in the Sea: Maximum Sustainable Yield and the Failure of Fisheries Management* (Chicago, 2011). ISBN: 978-0226249667

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Introduction by Jacob Darwin Hamblin, Oregon State University

Is Maximum Sustainable Yield a tool of science or of diplomacy? For the world's fish populations, the concept has stood for years as a working blend of economic goals and conservation principles. The word "sustainable" lends it a particular respectability in our environmental age. It purports to answer the burning question about how many fish can reasonably be taken from the sea when their numbers are dwindling and many vessels, from many different nations, all want a piece of the action. MSY suggests that scientists possess the expertise to predict the largest catch that can be taken from a species' total stock without threatening its survival.

Despite this so-called "sustainable" practice, there have been numerous crashes in marine life populations. Many scientists have criticized MSY for providing an unrealistic view, not taking into account important variables in fisheries management. Yet the concept continues to stand at the core of contemporary American management practices.

In ***All the Fish in the Sea*****,** Carmel Finley is unambiguous: Maximum Sustainable Yield is policy, masked as science. It dovetailed extremely well with the goals of the United States Department of State in the aftermath of the Second World War, as American fishing interests tried to find a scientific basis for extending their dominance in waters all over the world. Using MSY as a guide, they were able to justify fishing far in excess of what some scientists recommended and what many other states wished.

Our first commentator is **Sayuri Guthrie-Shimizu,** the Dunlevie Family Chair of History at Rice University. Like Finley, she has explored the connections between fisheries and the history of international affairs, specifically in the Pacific Region. In her book *Creating People of Plenty*, Guthrie-Shimizu examined trade policy in the immediate postwar period to demonstrate how the United States sought to turn Japan not only into a Cold War ally, but a nation whose economic foundations were distinctly pro-capitalist.[1]

Arthur F. McEvoy, the Paul E. Treusch Professor of Law at Southwestern Law School, is well-known to environmental historians of the oceans because of his 1986 book *The Fisherman's Problem*. While studying Californian fisheries, McEvoy told a tale of repeated failures of public agencies to take useful steps to stop the depletion of fish. His analysis focused on the interplay between ecology, economics, and the law. Like Finley, he saw serious flaws with the concept of MSY, particularly because it rested on the assumption that stocks of fish existed in isolation from their

[1] Sayuri Shimizu, *Creating People of Plenty: The United States and Japan's Economic Alternatives, 1950-1960* (Kent State University Press, 2001).

environments, with little thought devoted to more complex ecological relationships.[2]

Bo Poulsen is Associate Professor in the Department of Culture and Global Studies at Aalborg University, Denmark. He brings to this roundtable not only a European perspective but also expertise on fisheries politics in the North Atlantic. As an environmental historian, Poulsen has used historical scientific data to investigate how changes to the natural environment may have influenced fish in the distant past, particularly North Sea herring stocks in the early modern era.[3]

Our final commentator, **Michael J. Chiarrapa**, is Associate Professor of History at Quinnipiac University. Much of his work blends marine environmental history with architectural history. He has pointed out that fisheries architecture and fisheries landscapes deserve greater scrutiny by scholars, because of what they reveal about cultural values. In a recent essay in *Environmental History*, for example, he called upon historians to integrate buildings, boats, and other fisheries infrastructure more substantially into their work, because these are spaces at the threshold of the land-water continuum where discourse about nature is created.[4]

Before turning to the first set of comments, I would like to pause here and thank all the roundtable participants for taking part. In addition, I would like to remind readers that as an open-access forum, *H-Environment Roundtable Reviews* is available to scholars and non-scholars alike, around the world, free of charge. Please circulate.

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[2] Arthur F. McEvoy, *The Fisherman's Problem: Ecology and Law in the California Fisheries, 1850-1980* (Cambridge, 1986).

[3] Bo Poulsen, *Dutch Herring: An Environmental History, c. 1600-1860* (Amsterdam University Press, 2008).

[4] Michael J. Chiarappa, "Dockside Landings and Threshold Spaces: Reckoning Architecture's Place in Marine Environmental History," *Environmental History* 18:1 (2013), 12-28.

Comments by Sayuri Guthrie-Shimizu, Rice University

The Strange Career of MSY

Indeed there is more to the fish (and the oceans that harbor them) than meets the eye. That is the central takeaway of Carmel Finley's meticulously researched book chronicling the rise of MSY (Maximum Sustainable Yield) as the "scientific" concept that did much to (mis)shape international fisheries regulation after World War II. Finley's wonderfully braided story tells us how fish science and oceanography informed, and often misdirected, incipient efforts to build international mechanisms to deal with the problem of fish stock depletion. She is most effective in showing how politicized that institution-building process was throughout the critical decades leading up to the International Technical Conference on the Conservation of the Living Resources of the Sea held in 1955 in Rome. Highly readable, the book succinctly explains to the lay reader the arcana of fish in crisp and engaging prose without an ounce of condescension. Finley does an equally good job of shining a spotlight on the dark corners of diplomacy that involved not only government officials and agents of domestic special interest groups but also supposedly impartial scientific experts dedicated to the protection of marine resources. The aggregate result of her multifarious narrative skills is a startling and thought-provoking tale laying bare the international politics of knowledge production, the often highly negotiated nature of what prevails as "science," the enormous challenges involved in international governance for common property resources, and a shift, indeed a sea change, in the global maritime order in the mid-twentieth century and the United States' mixed record in that historical process.

One is prone to assume that, as practitioners of "objective" natural science, marine biologists and oceanographers, working in relatively new academic fields that cohered as a community of experts in the first half of the twentieth century, would be well equipped to create the kind of "epistemic community" that International Relations theorist Peter Haas and others have envisioned as an agent of global governance.[5] Finley, however, shows that the world of fisheries regulation driven by the United States in the early postwar decades was anything but scientifically communitarian. True, it consisted of groups and experts institutionally autonomous from the sovereign state; they were bound by their shared commitment to finding policy solutions to a common problem and to assessing policy outcomes to refine the original prescriptions. Those experts even upheld shared values that transcended narrowly bounded national interests. But they remained mired in a highly politicized field, failing to create a functioning epistemic community in the end, with disturbingly long-term negative implications for the marine environment they sought to safeguard.

[5] Haas, Peter M. "Epistemic Communities and International Policy Coordination." *International Organization*. Vol. 46. No. 1. Winter (1992), 1-35.

In her discussion of the surprising flimsiness of MSY as a scientific concept, Finlay points to the "scientific racism" beneath the attitudes of the American public officials and scientists concerned with fisheries regulation at mid-century. They long held the notion, or even truism as it were, that Japanese fish science was at best woefully lacking by Western standards of scientific rigor, and at worst nonexistent. In fact, Finley argues, Japan, because of its dependence on marine living resources, had a long and venerable history of studying fish stocks and their husbandry going back to the industrialization of the nation's inshore and coastal fisheries in the nineteenth century. Japan was also a respected source of knowledge in the inchoate fish science sought by other nations from the 1930s on, including the United States. None other than the Natural Resource Section of the Supreme Commander for the Allies Powers (SCAP) was among those who depended on the data on fish stocks accumulated by Japanese experts. And yet American stakeholders such as Secretary of State Cordell Hull (involved in the 1936–7 US-Japanese dispute over Alaskan salmon) and Wilbert Chapman, the fish scientist turned main architect of postwar US fisheries policy, were steadfast in their dismissal of and disdain for Japanese fish science and the data it produced. Works by historians of Japanese fisheries such as Yoshitaka Takahashi attest that Finley is right: Japan had indeed developed a sophisticated administrative system of fisheries management based on systematic accumulation of data even before Japan was "forced open" by Commodore Matthew Perry and famously exposed to the benefits of Western science and technology.[6] Another interesting point Finley makes about various iterations of American racism or ethnocentrism tainting the views of American scientists and practitioners is that the United States vilified the efforts by Central American coastal nations such as Ecuador and Peru to curb American bait fishing off their shores as an attempt to extract a "tribute" from US fishermen, and they refused to regard such control as a legitimate administrative prerogative exercised by sovereign states on a par with the United States.

Another feat achieved by Finley's history of marine science is to complicate the familiar historical narratives of American foreign relations and Cold War–era power alignments. As a historian of US-Japanese relations, I was delighted to see that Finley foregrounds a diplomatic drama other than Japan's military misadventure in China and the failure of naval disarmament that fatefully contributed to the souring relationship between the two countries in the late 1930s. The US-Japan showdown over Alaskan salmon (and all the associated problems of maritime jurisdiction and rights to extract resources in the high seas) has hardly, if ever, garnered mention in the existing literature on US–East Asian relations. And yet it was actually a hair-trigger conflict that perilously ratcheted up the racialized alarm many Americans, both policymakers in Washington and ordinary citizens in the West Coast states and Alaska, came to feel about a potential "Japanese invasion" that threatened the nation's Pacific coastline. After all, the face-off over Japanese harvesting of Alaskan salmon created a rare occasion in which actual shots were fired at Japanese

[6] Yoshitaka Takahashi, *Shigenhanshoku no Jidai to Nippon no Gyogyo* (Tokyo: Iwanami, 2007)

nationals (including Issei fishermen operating out of US and Canadian ports) by angry Americans—fishermen trying to protect "our salmon" from the Japanese interlopers.

Similarly, I applaud Finley for showing us international historians that John Foster Dulles, as the chief US negotiator for a Japanese peace treaty, twisted Prime Minister Shigeru Yoshida's arm over separating postwar fisheries, not just the Chinese representation question, from multilateral World War II peacemaking. Just as Dulles exacted from a reluctant Yoshida a letter pledging that Tokyo would establish diplomatic relations with Chiang Kai-shek's Republic of China outside the framework of the San Francisco Peace Treaty, the stern American chief negotiator, in consultation with chief State Department fisheries official Chapman, forced the Japanese government to acquiesce to a negotiation over Japan's fishing activities separate from the San Francisco peace settlement. The result was the North Pacific High Seas Fisheries Convention, signed by the United States, Canada, and Japan in May 1952. It was in this very first postwar treaty the Japanese government signed as a "sovereign state" redux that Tokyo swallowed the "abstention" doctrine governing high-seas fisheries. In this highly unequal treaty, Japan, supposedly on its own volition, agreed to "abstain" from the commercial harvesting of certain fish species (salmon and halibut) in the high seas off Alaska and Canada. Finley masterfully shows that, here too, MSY was the diplomatic tool, not a scientific concept, deployed by American fisheries stakeholders such as Chapman to prevent the Japanese distant-water fishing fleet from catching "their fish"—i.e., Americans' and Canadians'—swimming in the high seas outside North American maritime jurisdictions. Thus, we now know that Yoshida had to write another "Yoshida letter" to Dulles, this one over fisheries, in order to ensure that the San Francisco Peace Treaty would be safely ratified by the US Senate. That the venue of the peace conference was one of the epicenters of the anti-Japanese fisheries agitation on the West Coast and that senators such as William Knowland (R-California) and Warren Magnuson (D-Washington) had powerful fishing interests in their constituencies were hardly coincidences, I might add.

Outside the bailiwick of US-Japanese relations, Finley similarly upends with her "fish story" the storyline international historians are accustomed to. For example, she informs us how the United States saw its control begin to slip over the issue of the three-mile coastal jurisdiction—the bedrock of the freedom-of-the-seas principle so dear to its national history—facing members of the Organization of American States (OAS). This happened at the very time when this first postwar regional alliance was a driver and manifestation of the intra-hemispheric solidarity that the United States was able to command in the early postwar years. When small coastal states such as Ecuador, Peru, and Chile joined Mexico in expanding their seaward jurisdictional claims in order to shield their offshore fish stocks from aggressive harvesting by capital-rich high-seas fishing nations spearheaded by the United States, the United States' weakening hold on the international maritime order premised on the three-mile coastal jurisdiction became ever more precarious. More interesting still, this "Western Hemisphere" revolt (reinforced by other small coastal-state insurgents

like Iceland and Denmark, both original members of NATO) first made its weight felt in forums provided by the United Nations where the United States still enjoyed a commanding position. Washington unexpectedly found a strange bedfellow in Moscow when it came to the matter of expansive claims on high-seas fisheries rights during the 1950s, at the height of the Cold War no less. Friends and enemies often switched sides depending on whether the battle took place on land or at sea.

Finley's exploration of international relations over fisheries also opens our eyes to the relentless resilience of American corporate capital seeking to profit from the commodification of the oceans' bounties. Finley notes that the Americans failed to stay abreast of the global trend toward catching and processing at sea in the 1950s by investing in the distant-fishing fleets operating on the mother-ship processing model, but is it not possible to argue that American fisheries capital simply elected to channel its resources elsewhere by resorting to direct foreign investment in canning and processing overseas? Here I am proposing a slightly different spin on what Finley reveals for us: that Central American fisheries such as the Peruvian anchovy industry grew exponentially in the postwar decades because of American money. Even more to the point, American corporate capital such as Van Camp profited handsomely by making clever use of Samoa as a tariff-free haven where the company set up canneries to pack unprocessed fresh tuna caught by Japanese fishing boats worked by what was then dirt-cheap Japanese labor. It is an amusingly creative business strategy given that American fisheries companies bitterly complained to officials at the General Agreement of Tariff and Trade (GATT) about the "cut-rate" canned tuna imports from Japan flooding US markets!

I want to raise a few questions that were left largely unexplored in Finley's brilliant yet relatively short book, and I do so because it has, as all good pioneering works do, opened up for us a whole new field of questions. While I personally find convincing Finley's argument about MSY's problematic property as a scientific concept, I was left wanting to read more about how those fish scientists and oceanographers based outside the United States sought to counter the intellectual hegemony American scientists such as Chapman and his disciple William Herrington sought to impose on the rest of the world. How did scientists other than Britain's Michael Graham—for example, Japanese fish and conservation experts—argue against MSY by deploying their own "scientific" data and theories? The international fisheries conventions of the post–World War II era, such as the 1949 International Convention of North Atlantic Fisheries (ICNAF) and the 1952 North Pacific Fisheries Convention, created an advisory board of scientific experts and mandated it to meet and appraise collectively assembled data on a regular basis. These forums, I suspect, would have provided a revealing window into the contested and often politically tinged exchange of ideas over what constituted "scientific" data and theory and appropriate policy solutions to be derived from that body of knowledge.

Another point on which I found myself wanting more was the role played by Canada in the historical processes chronicled in Finley's book. Throughout her story, Canada makes occasional cameo appearances. As a key fishing nation, however, Canada was

present at the creation of the first international fisheries management mechanism, the International Pacific Halibut Commission in 1923, and has remained a key player in international fisheries governance ever since. In my own research on North Pacific fisheries diplomacy, I have been struck by the high levels of policy coordination between the two North American fishing superpowers, Canada and the United States. With fisheries emerging as an avenue of wide-ranging cross-border economic policy consultation and coordination in the twentieth century, the United States and Canada often faced other contenders in international fisheries diplomacy with a united front, as was the case in the negotiations leading up to the 1952 North Pacific High Seas Fisheries Convention. Given this system of collaboration, one wonders what Canada's role was in establishing and propagating MSY as the driver of international fisheries regulation before, during, and after the 1955 Rome Conference. Were Canadian fish scientists complicit? If so, did that have anything to do with where they were trained in this new discipline of science? It is impossible to capture in one book, even a study as multilateral as Finley's, the historical forces emanating from all countries involved in this enduring common property problem—as impossible as catching all the fish in the sea. In that spirit, let me close my review with a prod to Finley for another book: after all, we know that there are plenty more fish in the sea (to write a book about, that is)!

Comments by Arthur F. McEvoy, Southwestern Law School

Maximum Sustainable Yield: A Laffer Curve for Fisheries

All The Fish In The Sea is a powerful book, with implications aplenty reaching far beyond the realm of fisheries management. The author is a historian of science who now teaches at Oregon State University; she was a freelance journalist writing on environmental issues before going to graduate school at UC San Diego and completing the dissertation from which the book developed.[7] I confess that I also wrote a dissertation on West Coast fisheries at UCSD, years ago, although the concision and the immediacy of Finley's book puts my own to shame. The book deconstructs the dominant paradigm of post-World War II fisheries science – maximum sustainable yield – more effectively than any other writing with which I'm familiar, in any field. It rests on first-class research into primary sources. It is literate in science, history, and politics. It has important things to say, not only about the politics of scientific inquiry but about the complicated role that purportedly "objective" science plays in American government.

The book deals with the role of fisheries science in the development of US policy for oceans, primarily in the Pacific, from the 1930s, when Japanese vessels began competing for salmon in waters off Alaska, through the UN-sponsored meeting at Rome in 1955, when US representatives managed to establish maximum sustainable yield (MSY) – the idea that harvests should be allowed to grow unchecked until scientific evidence proved that particular stocks were overfished – as the organizing principle for the management of high-seas fisheries. Finley's argument is that MSY became US government policy, not because it explained observed changes in the fisheries better than alternative theories but because it worked so well to justify US demands for access to high-seas resources in the aftermath of World War II. "MSY," as Finley put it, "is, and always has been, policy disguised as science" (10). Once enshrined in policy, embodied in institutions, and backed up by investment, MSY-the-policy underwrote the depletion of fisheries the world over; it does so to this day.

MSY was not without competitors: other theories of population dynamics dating back to the early twentieth century, from Great Britain and Japan as well as the US, emphasized the importance of environmental factors, price dynamics, and especially fishing pressure more than the relatively simplistic MSY model. MSY won out, however, because it better suited US foreign policy goals and because it resonated with deeply-seated American ideas about nature, about frontier development, and about entrepreneurial liberty. Finley emphasizes the role of Wilbert M. Chapman,

[7]Christina Johnson, "The Problem is Maximum Sustainable Yield," *Sea Grant California* (December 21, 2007), http://www.csgc.ucsd.edu/NEWWSRROOM/NEWSRELEASES/Carmel_Finley.html, last visited June 17, 2014.

who started out as a fishery biologist but found his niche as a policy entrepreneur, first in government and later in private industry. Chapman's boundless faith in the wealth of ocean fisheries, combined with his lack of interest in the complexities either of the dynamics or the economics of real fisheries, made him the ideal advocate for keeping the high seas open for American commercial and strategic ambitions. He led the US delegation to the 1955 Rome conference and ensured its outcome. Thereafter he left academia and government service to serve as advisor and lobbyist (although Finley does not use the term), first for the American Tuna Association, later for Van Camp Seafood, and ultimately for Ralston-Purina.

More careful scientists disagreed with Chapman but were unable to counter him successfully, not least because they lacked the political skills that enabled him to garner industry support and unheard-of amounts of government money for research programs.[8] British scientists like Michael Graham, Raymond Beverton, and Sidney Holt thought that governments should permit fisheries to grow slowly, under observation, so that problems would become visible before a fishery became overcapitalized and thus more difficult to control. Graham went so far as to insist that "the ability of fishermen to make a living" was a significant parameter in fishery dynamics (85, 145). These scientists approached fisheries as integrated systems, attending to environmental, economic, and social factors in addition to the behavior of target species. Japanese scientists made important contributions to fishery science as well, before and after World War II, although US policymakers paid scant attention to them (76-78).

MSY was more powerful politically because it was abstract and did not require affirmation in the particular details of economics or biology. It implied a management strategy of allowing harvests to grow unimpeded until stocks showed unmistakable evidence of overfishing: it socialized the cost of scientific uncertainty and deferred the troublesome task of limiting effort to an undetermined future. Best of all, it gave US policymakers a scientific reason for insisting that Latin American countries open access to just-developing fisheries for tuna in their waters, while allowing the US to deny Japanese fishers to Alaska salmon because those fisheries were already "developed" and, at least theoretically, under management. One of Finley's key insights is the way in which she links MSY to the Progressive, utilitarian, development-oriented notion of "conservation" as "wise use," which allowed Chapman and his allies in the State Department to elide the troublesome contradiction between insisting that US fisheries be closed to foreigners (because they were already "developed" and thus theoretically under government management) but that third-world fishing grounds (which were as-yet not "fully developed") be kept open to US boats (165).

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[8]Most impressively, the California Cooperative Oceanic Fisheries Investigations. See Arthur F. McEvoy, *The Fisherman's Problem: Ecology and Law in the California Fishereis, 1850-1980* (Cambridge 1986), pp. 193-94.

As a history of science, *All the Fish in the Sea* makes its key contribution by showing how politics, ideology, and interest influenced the substantive development of scientific knowledge in this one, arguably parochial but nonetheless allegorical area. Finley shows how MSY displaced its competitors, not because it yielded any insight into the problems at hand but because it enabled its exponents to overcome their opposition rhetorically – not least because it finessed key weaknesses in the Americans' position and because it resonated deeply with postwar Americans' view of themselves and their place in the world. The analysis is structural more than internal; more Foucault than Kuhn. Elizabeth Warren has written cogently on the subtle and not-so-subtle ways in which power and money influence the course of scientific inquiry, not only in highly-charged areas like pharmacology but in the more obscure corners of social science as well.[9] Finley insists that Chapman was sincere in his convictions about the capacity of the oceans to produce food and of markets to correct themselves; her critiques of the science behind MSY and the uncritical way in which its exponents advanced it as a template for policymaking are trenchant nonetheless.

The remarkable thing about MSY is the way in which it crowded out its competitors and continues to this day to cloud both science and policymaking, like some oceanographic version of the Laffer curve. Biologists continue to disagree on the impact of overfishing on the dynamics of exploited species; Finley notes that the question – which one would think was long since put to rest – generated heated controversy as recently as 2009 (165).[10] As before, researchers' positions on the issue tend to correlate with their nationalities and institutional affiliations: Canadian scientists tend to emphasize the role of harvesting in fishery declines, for examples, while US researchers are more likely to point to the role of "environmental" influences on fishery dynamics.[11] Fisheries themselves continue to decline, meanwhile, seemingly inexorably. *All the Fish in the Sea* casts a clear light on the ways that rent-seeking, by scientists and politicians as much as by the fishing industry itself, contributes to the process.

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[9]Elizabeth Warren, "The Market for Data: The Changing Role of Social Sciences in Shaping the Law," *Wisconsin Law Review* v. 2002, pp. 1-43 (2002).

[10]See Boris Worm et al., "Rebuilding Global Fisheries," *Science*, 325 (2009): 578.

[11]See Arthur F. McEvoy, "The Role of Law in Engineering 'Natural' Disasters," *Onati Socio-legal Series* (online), 3(2): 293-311 (2013). Available http://ssrn.com/abstract=2221241. Reprinted in *Disasters and Socio-Legal Studies*, ed. Susan Sterett (Quid Pro Books, 2013), 155-76.

Comments by Bo Poulsen, Aalborg University

Over the course of the 20th century more or less all modern states with access to a coastline have sought to harvest the fruits of the sea. Worldwide fishing has intensified manifold. More countries than ever before take part in fishing, more and more species are targeted, the finished food products travel further and further from when they are caught until they end up on a dinner table, adding to the ecological footprint of world fishing. Meanwhile, the successful attempts at restoring depleted fish stocks and endangered marine species are but a few. Within the last couple of decades multiple scientific papers have dealt with historicizing these phenomena of exploitation, and frequent depletions, of the living marine resources of the world's oceans. This seems well documented as an almost integral part of modern industrial fishing. Nonetheless, the reasons for why this has happened are far from fully understood, and *All the Fish in the Sea* adds considerably to our understanding of the confluence of historical developments, which together makes up a totality of the world history of 20th century fisheries.

Finley is not marketing her book as a 'brief world history of 20th century fisheries', and rightfully so, but what she does cover on a mere couple of hundred pages is quite a lot more than what is promised in the somewhat 'techy' full title of the book which reads: *All the Fish in the Sea: Maximum Sustainable Yield and the Failure of Fisheries Management*.

Maximum Sustainable Yield (MSY) conceptualizes the idea that natural resources, stocks of Pacific salmon for instance, produce a surplus of adult fish, which can be fished without harming the reproduction of the stock as a whole. The argument even goes as far as to state that it is beneficial for the fish stock to be fished, so as to remove the older slow-growing fish from the stock to give room for younger faster-growing fish. Fishing then can be sustained at fairly high level of intensity for the benefit of fishermen and the marine environment alike. This prospect was so appealing to the modern fisheries nations that it became central to international negotiations on how to share the fruits of the sea in the post-WWII Atlantic and Pacific Oceans.

The tricky part of MSY is to measure where exactly to place the line of maximum fishing intensity without jeopardizing the targeted fish stock. This is where, since the 1940s, marine science has been enlisted to come up with viable solutions using ever more sophisticated mathematical models inferred onto ever larger collections of fisheries statistics derived from scientific surveys and commercial catch data. However, while ideally the models can predict the future scenarios with great precision, in reality most marine ecosystems are so complex that inter-annual stock size fluctuations are contingent upon an almost infinite range of dynamic factors. The scientific challenges and shortcomings of the concept of MSY are well-known, and described in the literature. Yet Finley's *All the Fish in the Sea* is a 'first' in the

sense that we are treated to an in-depth analysis of the historical context of how MSY came to dominate international fisheries management from the 1950s until well into the 1990s. As such, *All the Fish in the Sea* is a great book. The arguments presented are brought forward largely by virtue of highlighting a number of stories centering on important people, processes and events rather than trying to cover everything. This might create a bias, but is works very well as a narrative.

For someone coming from Europe, like me, Finley's opening focus on the fishing industry of the American Pacific Northwest is refreshing, and I now know much more about the ongoing antagonism between Japanese and American fishing interests during the first half of the 20th century than I did before reading the book. However, one downside of not having intimate knowledge of Pacific topography is that I missed one or two maps of the Pacific indicating the changing territorial expanses of American, Japanese, Peruvian and Chilean etc. fishing activities following the 1945 Truman Declaration and into the 1950s, as Japan retained their pre-war sphere of influence with regards natural marine resource exploitation. One potential bias is the fact that the main focus is on American Pacific fisheries policy, where the motor of the narrative is the doings of American fisheries lobbyist, Wilbert Chapman, in combinations with high politics, the American lead initiatives in terms of territorial doctrines and regulations before, during and after WWII. However, these choices are fully justifiable given the fact the United States was the paramount victor and the dominant military and economic power in the Pacific region after 1945. Indeed it becomes explicit in the book that state power has been and still is of paramount importance for the development of modern fisheries. Finley makes clear how the Truman declaration set the boundaries for the postwar buildup of the Japanese fishing fleet. Then, following the fall of Kuomintang China and new geopolitical situation of the Korean War it is equally convincing that the Japanese government realized their rising strategic importance as an American ally in the Cold War. Upholding American fishing interests in the Pacific at the expense of mainly Japanese fisheries interests then became subordinate to the overall containment strategy towards communist regimes in Asia.

According to Finley, part of the US-Japanese negotiations post-WWII was geared at denouncing Japanese marine science, which had been very prolific in the 1930s, and Finley even calls it a racist approach to Japanese science. This is a serious allegation, and a highly intriguing proposition. Intuitively, it seems very likely, but I would have liked to see the evidence for this scientific racism fleshed out a bit more in the text. It would also be very interesting to see to what extent such shaming of science was a part of American fisheries policies towards European marine science, and indeed if other leading fishing nations such as the United Kingdom, Japan or Norway upheld a similarly chauvinist agenda towards the marine science from competing nations. My inclination would be to suggest that marine science would be instrumental in such ways regardless of which country was the orchestrator thereof, but to my recollection this question has not yet been researched in a systematic and comparative way.

While the US experience shows that fisheries rights came to follow from state power and dedication to support a fisheries sector, the spectacular whaling story of Greek shipping tycoon Aristotle Onassis reveals the risks of not of being backed by a powerful nearby state, when embarking on a high seas whaling expedition. Onassis came in deep trouble as he sent three Panama registered ships accompanied with dozens of catcher boats to Pacific Latin America in 1954. Operating inside Peruvian territorial waters, Onassis's three whaling vessels were captured and taken by the Peruvian navy, of which one of them was taken only after a high seas pursuit, where a Peruvian airplane fired into the water around it. As Onassis's fleet was insured by Lloyd's in London, they had to pay a fine of $3 million for the ships' release. Onassis's case serves to show clearly how huge capital investments did not suffice for successful whaling in the 1950s. When the newly established territorial waters were violated the backing by a powerful state was necessary. Onassis had none of that in the Pacific and was treated as any other pirate.

Finley has done a great job in terms of portraying the central actors in her story in a fair and nuanced way. The American lobbyist Wilbert Chapman for instance could be seen as playing the lead role throughout the book. Chapman represented the interests of the American fishing industry, chiefly the immensely capitalized Pacific salmon and tuna fisheries. Given that this industry was responsible for significant depletion of Pacific fish stocks in the middle decades of the 20th century, Chapman might have been cast as a prince of darkness in light of contemporary views on conservation. Yet Finley remains loyal to his cause in the sense that she is keenly alert to the fact that in his own time, in the 1940s and 1950s, Chapman along with most fisheries scientists and fishermen had really no reason to believe that the tuna and salmon of such a vast ocean as the Pacific could be seriously depleted, when this was not in the self-interest of any one country taking part in the fisheries. Therefore, Chapman is portrayed with a large degree of sympathy, even if he is a somewhat doubtful protagonist.

By contrast, the colourful British marine scientist Michael Graham is portrayed as an almost tragic hero in the story. Graham is famous for his 'great law of fishing', stipulating that unrestricted fishing becomes unprofitable in the long run. While at least on paper, MSY had the potential to curb such development, in reality the MSY style of regulation tended to overexploit the targeted resource almost in the same way as in the case of no restrictions. Finley brings forward extremely interesting information on how important critical papers on the limits of MSY were simply edited out of the final report from the 1955 conference in Rome.

Admirable as the book is, I am nonetheless a bit puzzled as to what were the main driving forces when trying to assert why MSY came to dominate fisheries management as it did. My hunch is that Finley would agree that the contingency of global geopolitics and ensuing considerations on the security of marine food sources before, during and after WWII is the most important indirect stimulus to Pacific and North Atlantic fisheries. But what was then the significance of the colorful individuals, Wilbert Chapman, Michael Graham, Nick Bez, Schaefer etc.? Were they

merely representing the views of different scientific, socio-economic and political interest groups, or did they themselves mold the future of fisheries by way of their actions in the 1930s-50s? In other words, would different scientists providing different scientific input have resulted in a different outcome?

Implicit from the story told in *All the Fish in the Sea*, I am inclined to think not. At the end of the day, it follows that MSY was conceived as a useful political instrument. The concept gained a foothold on government policy in the US and abroad long before there was any scientific evidence that this was the right model to impose on international fisheries management. Only afterwards were marine scientists enlisted to carry out the science to support this already agreed upon model. Scientists, it follows, were dispensable, geopolitical interests not. This leaves us with a very important message on the role of science in society, and one of relevance far outside the realm of marine science history.

All the Fish in the Sea raises a further number of questions, which should attract the interest of future research into the topic of how modern global fisheries and fisheries management came about during the 20th century. Finley shows a discrepancy in the wishes for international fisheries management between the different countries taking part in the Rome conference. A comparative study of the strategy and scientific backing in countries other than USA and the UK would be very interesting. It would also be interesting to investigate to what extent the cooperation within an organization like the International Council for the Exploration of the Sea played a role for the position of different countries. A comparative approach I believe would further qualify to what extent the overall development of fisheries management has been contingent on the doings of a select number of American and English scientists and civil servants, compared to the more structural economic, political and technological changes in the history of marine resource exploitation.

Finley has written a relatively short monograph, but it is rich in scope and range topically and geographically. It is also a very good read, and Finley has done a great job in weeding out scientific jargon and too many technical phrases, which can otherwise make history of science scholarship a tough read. This book could be read by a Danish undergraduate history student, and I will seriously consider using at least parts of it in university teaching. I think that is the best recommendation I can give to this type of scholarly literature.

Comments by Michael J. Chiarappa, Quinnipiac University

As a marine environmental historian, the concept of maximum sustainable yield (MSY) is a conspicuous concern in my research and teaching. From another perspective, in my role as a public historian—where I have attempted to foster dialogue and programming with governmental and non-governmental groups, museums, and fishing communities—MSY's historical shadow is ever-present, giving fisheries a usable past whose immediacy can be palpable and frequently contentious. Why, one might ask, does MSY become so vexing when, in our modern Green age, just the mention of "sustainable" or "sustainability" often evokes a shared sense of stewardship among those with even the vaguest awareness of American fisheries? Clarity emerges when we begin to consider the range of stakeholders affected by MSY—both in the past and present—and the political machinations that inevitably grip competing claims to marine resources. So it might come as a surprise to some, but certainly not to many in fisheries, government and academic circles, that MSY's conceptual birth and subsequent implementation is so complexly grounded in ideology, not necessarily sound science to protect global fish stocks.

Carmel Finley, in her book, *All The Fish In The Sea: Maximum Sustainable Yield and the Failure of Fisheries Management*, unravels this politically intriguing, yet environmentally tragic, legacy. To illuminate the tradition out of which MSY emerged, Finley introduces her readership to an often widely misunderstood fact—fisheries science developed as a tool to increase harvests and expand economic opportunity, not necessarily protect fish. Not unlike the Lockean impulse that pushed colonists to gainfully appropriate the earth's bounty, late nineteenth/early twentieth century fisheries science was about refining the efficient, "wise-use" of the ocean's surplus; in short, the essence of "conservation" as the guiding rubric for the exploitation of the seas. This agenda proceeded with faith in the sea's biological resiliency (in spite of signs of declining stocks), and the belief that scientific management and artificial propagation could help restore stocks. The U.S. Fish Commission, and later, its successor, the U.S. Bureau of Fisheries, facilitated these ambitions through the development of hatcheries, and encouraged the design of technology that would allow fishermen to venture to ever more distant waters. The ideological footprints of Alexander Hamilton and Thomas Jefferson were everywhere during this time of intoxicating commercial expectations, making fisheries an instrument of American territorial reach, economic hegemony, and a deeply engrained national ethos committed to improving nature. Similar to insights offered in Charles Rosenberg's work, Finley delineates the consistent pattern of cultural and political prerogatives that shaped and drove applied scientific research, and how they empowered the conduct of America's modern commercial fisheries.[12]

[12] Charles E. Rosenberg, *No Other Gods: On Science and American Social Thought* (Baltimore: Johns Hopkins University Press, 1997).

The most immediate antecedents behind MSY, and the events that gradually catapulted it to the forefront of American fisheries policy, were rooted in the country's quest to insure its economic and diplomatic options in the Pacific Basin during the first half of the twentieth century. Today, we are largely aware of how environmental politics can be inextricably tied to America's national security and wider geopolitical affairs. Finley's treatment of American efforts to blunt the formidable might of Japan's commercial fisheries in the years leading up to World War II shows that these concerns are longstanding. It also reveals—as many maritime historians know—that the United States was envisioning the Pacific Basin as critical in realizing the fruits of Manifest Destiny. The urgency behind these motives had been growing steadily since the mid-nineteenth century, and with Japan's emergence as the world's leading fishing power, coupled with its increasingly aggressive territorial expansion, the United States faced a more complicated task in staking its claim to the "Pacific Fisheries Frontier" (Chapter 3). Finley uses the late 1930s standoff over access to Bristol Bay's salmon to highlight how the United States used "conservation," as well as a strong dose of ethnocentrism, to limit Japanese fishing in the waters near Alaska. Americans hedged their position in these early rounds of the salmon wars by inaccurately claiming a superior conservation program and disparaging Japanese science. The prejudicial overtones that accompanied accusations of the Japanese as irresponsible stewards should come as no surprise in America's conservation rhetoric—Chinese and Japanese immigrants faced it in California, Irish and Italians faced it in varying degrees in New England, and most recently, Vietnamese and Native Americans have faced it in various areas of the United States.

In the aftermath of World War II, the United States sought a fusion of science and policy (even if empirical rigor and efficacy were lacking in both) that could flexibly empower the ideological and economic underpinnings of its global fishing crusade. MSY fit the bill. In the hands of its chief proponent, Wilbert McLeod Chapman, it was, in Finley's words, Western science" functioning as "a proxy for Western democracy" (78). This sentiment imbued MSY with significant latitude and, emboldened by Western science's presumed superiority, justified assertions by its proponents that fishing need not be restricted until there was scientific proof that stocks were being overfished. Such a formulation of MSY allowed the United States to use it to arbit an array of objectives. Central among these was freedom of the seas, necessary to insure the options of America's distant water fleet. It was also a means to encourage the liberating specter of American free market fishing among our allies, and, in more politically volatile areas of the globe, blunt the influence of left-leaning movements. With purportedly sound science on its side, MSY allowed the United States to both encourage and leverage the postwar expansion of Japanese fisheries, and refute claims from Latin American countries that American tuna fleets were endangering their offshore resources. Finley challenges us to see a complex matrix at work—the re-packaging of the political, moral, and scientific weight of America's conservation

tradition into a policy of MSY. This re-packaging was necessary if Chapman and his cohort were going to profitably internationalize American fisheries and advance the geopolitical clout they stood to exert in diplomatic affairs.

By the 1950s, the sea's bounty—particularly Pacific tuna—was becoming so valuable in the modern global marketplace that the urge by nations to enclose their waters—to insure their wealth at home—was reaching greater heights. Just as American states had jousted for territorial control of the marine resources in their waters and solidified these claims in the public trust doctrine, so too did capital-intensive fisheries prompt nations to extend their offshore jurisdiction.[13] This issue, along with concern over how the world's fish stocks might best be conserved, was the focus of a conference held in Rome in 1955 under the aegis of the United Nations Food and Agriculture Organization (FAO). Capitalizing on Milner B. Schaefer's surplus production theory, along with heavy lobbying from William Herrington and Wilbert Chapman, and a strong dose of American conservation boosterism, the United States was able to get conference delegates from the world's leading distant water fishing nations to sanction MSY "as the scientific goal of international fisheries management"(148). While the luminaries of American fisheries management may have earnestly believed in its efficacy, there is no denying that MSY provided critical diplomatic cover for the United States as it sought common ground with other nations hoping to push the limits of fish harvests. Not that there were not dissenting voices. British scientist Michael Graham urged caution, advocating catch restrictions before stocks showed signs of stress, as well as greater attention to interactions among fish populations. Similarly, Graham's Japanese colleague, Tomonari Matsushita, argued that MSY assumed optimum biological conditions that were impossible to predict given the ecological variables that were in play at any given time. In retrospect, we are struck, but perhaps not surprised, at these voices being muffled. But MSY, as a scientific paradigm, conveniently conformed to the juggernaut that was being unleashed by high-volume, capital-driven fisheries, an approach laden with virtuous economic assumptions that downplayed the environmental costs of such aggressive expansion.

When reading *All The Fish In The Sea*, we are not so much surprised at the human circumstances that shape the focus and application of scientific inquiry, but are reminded that these motives are so deeply wrought (historically and culturally). Of course, all of this complicates environmental decision-making and natural resource use, as we well know from Dean Bavington's analysis of the "managed annihilation" of the northwest Atlantic's cod stocks.[14] MSY's intellectual pedigree arguably spans centuries, extending from John Locke to the culture of improvement to the modern belief that science can remedy any of society's ills. When all this is wrapped in an ethos committed to empowering American democracy through the creation of

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[13] Bonnie J. McCay, *Oyster Wars and the Public Trust: Property, Law, and Ecology in New Jersey History* (Tucson: University of Arizona Press, 1998).

[14] Dean Bavington, *Managed Annihilation: An Unnatural History of the Newfoundland Cod Collapse* (Vancouver, BC: University of British Columbia Press Press, 2010).

wealth, we are able, as Finley aptly shows, to better understand science in its guise as an agent of compromise. Matthew McKenzie has explained how these integrated forces produced the profile of the "iconic fisherman," an image whose cultural tether was so formidable it was able to exact favorable conservation concessions when American fisheries began confronting some of their most pressing challenges.[15] This image still exerts a grip on America's environmental imagination, and continues to shadow deliberations surrounding American fisheries management. Needless to say, this mythic shroud had an indelible effect on Chapman and his fellow proponents of MSY, and impaired wider considerations of how fisheries science and policy could ever be reconciled with the complexity of marine ecosystems. For all the reasons Finley puts forward, along with those recently voiced by Jeffrey Bolster, we can hardly afford to not examine the historic contexts that endow "sustainability" with its virtue—certainly a strong case for making marine environmental history a more vital force in fisheries management.[16]

[15] Matthew McKenzie, "Iconic Fishermen and the Fates of New England Fisheries Regulations, 1883-1912," *Environmental History* 17 (January 2012): 3-28.
[16] W. Jeffrey Bolster, *The Mortal Sea: Fishing the Atlantic in the Age of Sail* (Cambridge, MA: Harvard University Press, 2012).

Response by Carmel Finley, Oregon State University

Thanks to Jake Hamblin for organizing this roundtable on my book and for finding four such careful and thoughtful scholars. All of you have given me one of the most pleasant days of my academic life, as I read and re-read your comments. I am exceedingly grateful to have my work read through different historical filters, and for questions that stretch my own conception of my work.

I very appreciated Guthrie-Shimizu's comments on how the geopolitics around fishing fits into wider diplomatic history. The postwar expansion of both fisheries and whaling, involving Japan, the Soviet Union, and the United States, have had important environmental ramifications, yet fishing and whaling are studied separately. They are managed separately, and they tend to have separate scientific constituencies. But it is one ocean, and fish and whales interact. These post-war expansions are the result of the same political, economic, and social goals, both at the national and international levels. The two sets of science need to be knit together at the policy level, by incorporating and creating context through the development of these histories.

We are just starting to understand the environmental legacies of the Cold War. The fish and whales were, of course, important in and of themselves, but for Japan and the Soviet Union, fishing and whaling were also territorial claims, as well as a challenge to American naval superiority. Some scientists believe that industrial whaling in the North Pacific set up a legacy of sequential collapse; with the removal of the great whales, the smaller but more deadly killer whales turned to preying on sea otters and sea lions, leading to the collapse of some populations.[17] This analysis is controversial, especially among scientists.[18] But it should be clear that fishing and whaling have their roots in the same Cold War imperatives. Geopolitics has environmental impacts.

During my Ph.D. defense, Chandra Mukerji asked me about epistemic communities within fisheries science, a question that stopped me cold. It's a question that I still have difficulty answering. Haas' definition is a fairly standard one (shared norms, values, notions of validity and a shared set of common practices).[19] There are many such groups within fisheries science. Wilbert Chapman was involved in setting up two marine study initiatives that exist to this day, CalCOFI, and Pacific Oceanic Fisheries Institute (POFI). Both are communities of scientists, from a variety of

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[17] A.M. Springer, J.A. Estes, G.B. van Vliet, T.M. Williams, D.F. Doak, E. M. Danner, K.A. Forney, and B. Pfister. "Sequential megafaunal collapse in the North Pacific Ocean: An ongoing legacy of industrial whaling?" *Proceedings of the National Academy of Sciences of the United States of America,* 100 (21), Oct. 14, 2003, 12223-12228, 12223.

[18] Kevin Bailey, *Billion-Dollar Fish: The Untold Story of Alaska Pollock,* (Chicago: University of Chicago Press, 2012, 119.

[19] Peter M. Haas, "Introduction: epistemic communities and international policy coordination," *International Organization,* 46(1), Winter, 1992, 1-35.

academia and management agencies. The science is debated. Results are published. The objective of both communities is to contribute to knowledge and scientists have certainly used the data to make critical comments about management, science, and policies.

But scientific communities have limited political power. It is only recently that dissent within the wider community of fisheries science has become a matter of public comment. I think both my work and Kurkpatrick Dorsey's recent book on the geopolitics of international whaling show that politics drives the science, at least where whales and fish are concerned. I would argue that the politics drives the science so thoroughly that the political underpinnings of the policy have been rendered invisible. The scientists involved are a lot more intent on reading the latest papers in the newest journals, rather than contemplating their own history—if a history of their portion of the profession was available to them and it generally is not. If they do search for the history within their own scientific papers, they will find neutral prose, presented with little or no context. Some scientists are writing excellent accounts of the history of fishing for certain species (the work of Robert S. Otto comes to mind, a retired federal biologist who has written a good account of the history of the king crab fishery in the North Pacific).[20] Such accounts are extremely valuable, but they do not place the development of fisheries into a broader political, economic, and social context. We need historians to do that, historians armed with lots of different sets of questions.

There is a battle going on within fisheries science (and I use that term very broadly, oceanography, ecology, life in the ocean) about the objectives of management. Should it be MSY, admittedly cleaned up, softened, and seen as a range, not a fixed number, or a new policy that would pay attention to population structure of fish communities?

In the Kuhnian model, I see fisheries science as ripe for an intervention from outside the science. The push to create marine reserves, for example, has come outside the management structure. Rather than an epistemic community of scientists, we need an epistemic community of citizens, invested in the health of the ocean resources at a local or regional level.

Guthrie-Shimuzu suggests it would be interesting to trace the exchanges of knowledge within fishery management forums. Fishery negotiators (who were sometimes scientists, sometimes not) were constrained by their policy constructs. The science was aimed at making the case to justify political objectives. Tracing this

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[20] Otto, S. Robert. "History of King Crab Fisheries with Special Reference to the North Pacific Ocean: Development, Maturity, and Senescence." In *King Crabs of the World: Biology and Fisheries Management,* edited by Bradley G. Stevens, 81-138
Boca Raton: CRC Press, 2014.

would be difficult. The official proceedings are written in dry, neutral language. It would take digging into the papers of participants to chart the unfolding of the arguments, re-creating the context in which the decisions were made. Historians of science need diplomatic historians.

The charge of scientific racism is indeed a serious one, as Poulsen notes. As Gutherie-Simizu writes, there were degrees of racism, more towards the Japanese, but also a disdain for of the ideas of Latin American scientists. There was enormous general racism against Asians on the West Coast, from Alaska to California, including British Columbia. The Japanese were the best fishermen and they provided cheap labor in the processing plants. They were regularly demonized in the pages of *Pacific Fisherman*. Its publisher, Miller Freeman, was deeply racist; he collected Native American regalia and would dress in it and pretend to be a wooden Indian. I see the scientific racism as fitting into the wider analysis of masculine American, feminine Japan. The Japanese are not systematic and efficient, their focus was not on maximizing the catch, but as I see it, on fishing economically, to make money. The rhetoric about conservation, so prevalent in the American literature, seems to be absent in many of the Japanese policy papers I have read (in translation, I hasten to add). Decision on when and where to fish in the 1930s were made by Diet. I think there is much work to be done to look more closely at the relationships between nation states and their fishing industries.

Poulsen also asks what the "main driving forces" were in the dominance of MSY. It became dominant because it was backed by the U.S. State Department and incorporated, in some fashion, in most of the international treaties that were signed during the 1950s and 1960s. It is policy, not science, which is why the science fails. It is still the foundation of American fisheries management, and it keeps the focus on estimating harvest, rather than on population stability. It is declared to be the best available science, and indeed, I would argue that it was, when it was adopted, in 1949. It is not the best science today, but shifting the policy means shifting the science, and a quagmire of a debate about something few people understand very clearly. This is a good place to drag in John Gullands's definition of MSY: "A quantity that has been shown by biologists not to exist, and by economists to be misleading if it did exist. The key to modern fisheries management."[21]

McEvoy also makes an interesting observation here that researcher positions tend to correlate with nationalities. Canadian scientists emphasize the role of harvest in fishery declines, while American scientists point to the role of environmental factors. Canadian scientists have been able to intervene politically to shape science; it is easier to make changes at the federal level, to implement license restrictions or to change harvest rates on long-lived rockfish. (Unfortunately, it appears the federal model is easier to dismantle, but that is another story). Sidney Holt has also noted that European fisheries science is more interested in continuity and stability over

[21] Roy Hilborn, from his introduction to Daniel Pauly's On the Sex of Fish and the Gender of Scientists, 1994.

time, while Americans are interested in optimization of fishing through MSY.[22] These few examples illustrate the question of underlying ideologies around fisheries management. Jennifer Hubbard is doing some interesting work, looking at the role of economists within fisheries, and the growing importance of the profession within the Canadian government. It would be good to investigate how fisheries science was created internationally. A project that I think is important would be trace the work of FAO, what countries were involved, what projects were started, what was the impact?

As Chiarrapa notes, the antecedents for MSY go back to Locke and the Enlightenment. One area I wish somebody would consider is how the European focus on "rational harvest" somehow became "maximum harvest" in the New World. While scientists like to parse this and believe that the important word is sustained, as far as managers and the public goes, the important word in maximum. I also agree that the iconic image of a fisherman clouds an understanding of the ruthless capitalism that rules the industry. These iconic images mask the role of government in expanding fisheries, and how government goals of open access actually diluted the ability of individual fishermen to make a living. Ideology again plays an important role within fisheries. While there is a great deal of rhetoric about fisheries being efficient, the main management tool has been creating inefficiencies to slow the catch and increase costs. Governments wanted open access, for reasons that had little to do with fish, and the policy contributed to poverty among many fishermen—poverty that they did not see as linked to government ideology.

One thing I think a lot about, like Poulsen, is could it have developed differently? How important were the people? In this current work, I am looking at the development of subsidies around fishing, starting with the two places where fishing played a substantial role in the national economy, Japan and Iceland (I could also have looked at Norway but things are complicated enough with two countries). I argue that postwar fisheries grew so rapidly because of government money, which allowed boats to be built by the dozen and equipped with the latest electronic technology. Iceland fishermen go from hand-lining in rowboats to setting records for the most fish caught in one day, in a couple of decades.

Fishing is boom and bust; the government money was like heroin, fueling an enormous boom. Post-war development would have been rapid, regardless of personalities. Geopolitically, fishing was a territorial claim and with the start of the Cold War, fishing was a proxy for other conflicts. Fishing was the key to the rebuilding of the Japanese empire and it was a way for the Soviets to challenge the American supremacy on the high seas. The formalization of research and development played an important role in the development of fisheries, a role that is masked; most of the early research work is on increasing the catch. As Chiarappa

[22] Sidney Holt, "The notion of sustainability," in *Gaining Ground: In Pursuit of Ecological Sustainability,* ed. D.M. Lavigne, (Limerick: University of Limerick, 2006), 43-82.

astutely points out, scientists, politicians and the industry were all involved in rent-seeking, which was fine until the stocks collapsed.

That said, I think Chapman truly made a difference, because of the scope of his vision, and because of his unique set of skills, not the least of which was his ability at self- promotion. He assiduously cultivated his professional network, he knew everybody, and he was a skilled and quick writer. My favorite picture of Chapman comes in McEvoy's book; he's at SIO, in a sports shirt, smoking a cigar, leaning forward. Who would not want to talk to him? As oceanographer Alan Longhurst has written, Chapman understood more abut the fishing industry than anybody before or since.[23]

His chief skills were not as a scientist, but as a lobbyist, as McEvoy points out. He worked unabashedly to expand American Manifest Destiny deep into the Pacific; his 1949 fisheries policy laid the ground for the Highly Migratory Tuna designation. Also remarkable was the breadth of his vision in terms of the expansion of fisheries science and oceanography. His vision resonated deeply with postwar American optimism, as McEvoy says. I believe he was sincere; again, as McEvoy observes, he was never troubled by the details, just the big picture, and he painted pictures that were bigger than most.

Did Americans fail to stay abreast with the global trend towards catching and processing at sea, or did the industry "elect to channel its resources elsewhere by resorting to direct foreign investment into canning processing overseas?" There is always more money to be made fishing virgin stocks. The Americans followed the fish to the money, first to Peru and the anchovy fishery, then to the high-seas tuna business. American political constructs, such as the highly migratory designation for tuna, ensured that Americans and Japanese would continue to pay a central role in management of these species, which live far outside the EEZ of both countries. Global capital was also quick to invest in American fisheries, most significantly Japanese money during the 1960s in the development of surimi from Alaskan pollock, and Norwegian money in the development of the North Pacific trawl fleet during the 1980s. It was only after 1976 and the creation of the 200-mile limit, that American government money flowed into fisheries in the form of subsidies to build boats and processing plants, to "Americanize" the fisheries.

I leave Canada in the capable hands of Jennifer Hubbard. There is indeed a high level of cooperation between the U.S. and Canada on fishery issues, except when they are fighting with each other over fishery issues, such as during the last round of negotiations on the Pacific Salmon Treaty. The Alaskans hammered Canadian salmon in the trans-boundary rivers, while the West Coast Vancouver Island troll fleet hit the small remnant of Oregon wild coho, now on the Endangered Species list. It is indeed difficult to fit in all the nuances of this complex and tortuous policy

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[23] Alan Longhurst, *Mismanagement of Marine Fisheries,* (Cambridge: Cambridge University Press, 2011), 4.

construction. The science—that stocks were being driven to extremely low levels—was trumped by the politics and who was going to blink first—the Alaskans, the Canadians, or the Americans? Fishing is never just about fish.

About the Contributors

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